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BIENNIAL REPORT

OF THE

STATE UNIVERSITY OF KENTUCKY

To His Excellency, the Governor, and the General
Assembly of the Commonwealth of Kentucky

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*To His Excellency, Augustus Owsley Stanley, Governor of
Kentucky, and the General Assembly of the Common-
wealth of Kentucky:*

Gentlemen :

In accordance with law I have the honor to submit to you my Biennial Report of the State University of Kentucky for the period ending June 30, 1915.

The State University is the outgrowth of the Agricultural and Mechanical College of Kentucky, and the following is an outline of its history.

In 1862 the Congress of the United States passed an act donating certain public lands to the several States for the purpose of enabling them to establish and maintain educational institutions for the promotion of agricultural and mechanical arts and science. Kentucky's portion of this magnificent gift was land scrip representing three hundred and thirty thousand acres of land. This scrip entitled the holder, under the government rules and regulations, to locate and own certain parts of the public land in the West belonging to the United States. Kentucky turned over its land scrip to Kentucky University and with the proceeds of the sale of the whole at the price of fifty cents per acre the Agricultural and Mechanical College was founded as a part of Kentucky University, a denominational institution. In 1878 the union of the State School with the University was dissolved by the General Assembly and the Agricultural and Me-

chanical College was organized and endowed as a State institution. Since then the name has been changed from the original to that which it now bears, "The State University, Lexington, Ky."

The institution is, of course, wholly undenominational and it invites the youth of the State, desiring an education, without regard to creed or faith to partake of the munificence of the United States and the Commonwealth of Kentucky. But while nothing relating to theology is taught or fostered, everything is done to elevate and inspire the students with high and pure moral ideals, advising and influencing them as far as possible to affiliate with and attend the church of their parents.

The University is located at Lexington, Ky., a city of about forty thousand inhabitants, the metropolis of the Blue Grass region. It is not believed that there is a point in Kentucky more favorably adapted for an educational center than Lexington; the surrounding country is as fertile as any part of the world's surface, the citizens are cultured and hospitable, and the city is of just that population to afford the greatest opportunity for general culture, with the least temptation to evil. Its stores and markets offer every need of the student life at as low a price in money as anywhere in the Commonwealth, and its hospitable homes are thrown open to all who come with the usual and proper social credentials.

The University is composed of the following colleges, each presided over by a dean who is responsible for the proper administration of the affairs of his respective college: The College of Arts and Science, the College of Law, the College of Agriculture (and the Experiment Station), the College of Mining and Metallurgy, the College of Electrical and Mechanical Engineering, and the College of Civil Engineering.

In addition to these there are special departments and schools, to-wit: The Military Department, the Department of Physical Education for young men and young women, the Department of Domestic Science and the School of Journalism. I do not believe that I transgress the rules of modesty or propriety in say-

ing that each and every college, school, department and class is under a competent and faithful dean, professor or teacher, and that in the University there is taught everything necessary to give to the student a cultivated mind, a sound body and a good moral character.

No young man or young woman needs to leave the State of Kentucky to secure a university education equal to that afforded by any institution in the country. As was said to me the other day by a man who was thoroughly informed on the question: "One can receive at State University as good an education, general or special, as at any other institution in the country at half the cost in money.

College of Mechanical and Electrical Engineering.

This is an age of vocational education and the young man who succeeds must be able to do at least one useful thing well; he must have an appreciation of the work of all men, and he must be always in an attitude of adding to his knowledge and skill.

The State University has provided a professional course in what might be termed dynamic engineering, the purpose of which is to train young men for careers of usefulness in the great industrial plants of this country. For a number of years the graduates of mechanical and electrical engineering have all been employed some time before commencement, and the young men who have been trained in this particular field of work by our Kentucky State University have been universally successful. Many of the great manufacturing plants of this country, like the General Electric, Western Electric, Allis-Chalmers, Baldwin Locomotive Works, American Car and Foundry Co., Sargent & Lundy, Consulting Engineers of Chicago, each year make requests for Kentucky young men to enter their employ with a view of eventually carrying some of the important burdens of our great manufacturing or engineering organizations.

The State University gives to young men as advanced a training in the science of mechanical and electrical engineering, as is offered by any other American institution of learning.

Now some of you may have the impression that a course in mechanical engineering is merely industrial; I want to say as to this view that such a course of study properly developed is highly cultural in its purpose. The students are as a matter of course given a large amount of drawing, experimental work in electrical and steam engineering, shop work, machine design and research work; but back of all these studies is a most thorough training in English, pure mathematics, physics, history, political economy, chemistry and applied mathematics.

The first object of an engineering course is to train men to be manly, cultured members of society, and be able to do some important work in this age of industrial achievement. There are so many branches of industrial work that are open to capable young men, for maintaining the standards that have been created and to make advances as the condition of the times demand. The State University of Kentucky trains men to be successful in any of the following activities: Machine tool building; steam engine and steam turbine design and construction; gas engine design and manufacture; telephone engineering; design, construction, testing and installation of all classes of electrical apparatus and machinery; converting structural steel into bridges; glass making, heating and ventilating; central power plant design; illuminating engineering; hydraulic engineering; locomotive building; car building; automobile manufacture; pumping machinery building; development of steam and electric traction lines; designing isolated lighting and power plants for public buildings; architectural engineering and the design and operation of all plants manufacturing any apparatus or supplies for man's use.

The officers of the State University of Kentucky are especially anxious to make the State University through her mechanical and electrical engineering department, particularly valuable to the young men of this Commonwealth. Much effort has been expended to develop a course of study that is second to none, and there is no reason why a Kentucky young man should go outside of his State to receive a technical training and education.

College of Civil Engineering.

The College of Civil Engineering not only teaches everything necessary to make the student an accomplished Civil Engineer, but it is rendering the State special aid by offering its services and advice in the erection of public bridges and the building of public roads. I make the following excerpt from a report of the Dean to me a part of this my report to you:

Civil Engineering as distinguished from other kinds of engineering may be called static engineering as it deals largely with structure at rest such as dams, reservoirs, bridges, railroads, steel buildings, sewer systems, pavements, tunnels and all other forms of stationary construction. Civil Engineering usually includes extensive construction on a large scale, such as building of railroads, the Panama Canal, the steel skeleton for tall buildings, sewer systems, street paving, and works which are public or at least serve the public.

THE COLLEGE OF CIVIL ENGINEERING.

The College of Civil Engineering, one of the separate colleges which make up the University, aims to do its whole duty. The question which naturally suggests itself is, what is the whole duty of the College of Civil Engineering? We feel that on account of our existence as one of the integral parts of the University we owe a two-fold duty, one to the young men who come into the college for guidance and instruction, and a second duty to the Commonwealth of Kentucky.

DUTY TO YOUNG MEN.

We discharge our duty to the young men by giving them instruction in various lines, as surveying, railroad location, construction, maintenance and operation, design of steel and concrete railroad and highway bridges, sanitary engineering, water supply for towns and cities, roads, streets and pavements, and all other branches of civil engineering usually offered in a University course. This line of instruction together with branches pursued in the College of Arts and Science leads to the degree of B. C.

E. As soon as students graduate from the College of Civil Engineering they are placed in a responsible engineering position with some industrial concern where they may develop still further in usefulness in their chosen profession.

Our instructional duties in the College of Civil Engineering extend still further as we give instruction to Mechanical and Mining Engineers in surveying, roof truss design, hydraulics and graphic statics, while agriculture students are given instruction in surveying and road building.

DUTY TO THE COMMONWEALTH.

This second duty, to the Commonwealth, is accomplished in various ways. We conduct a short course in Highway Engineering for road engineers, send out lecturers, get out useful bulletins, assist towns and cities in making proper decisions as to water supply, sewage disposal, and especially give aid to the smaller towns and cities where there is no competent city engineer. In other words, we feel that it is not enough for us to give instruction to those who come directly under our charge, but to the best of our ability we try in a measure to take the University to those who cannot come.

Each year the College of Civil Engineering gives a course in Highway Engineering for the benefit of County Engineers.

LAST YEAR'S COURSE.

Last year 172 men registered in the Short Course, representing 60 counties, 43 County Engineers, 10 County Judges, 26 Magistrates, 28 Demonstrators and Lecturers, 65 Contractors, good road enthusiasts and men preparing to be County Engineers and Road Inspectors.

During the Summer vacation students from this College were engaged in various phases of road work in the following counties: Nicholas, Fayette, Scott, Shelby, McCreary, Boyle, Monroe, Barren, Clinton, Jefferson, Casey, Russell, Fleming and Knox.

College of Mines and Metallurgy.

The College of Mines and Metallurgy, in addition to teaching the subjects which fall within the curriculum prescribed for the student, is deeply interested in developing the great coal mining

interests of the State of Kentucky. To this end it holds itself at all times ready and willing to aid both the operator and the miner. It aids the operator by affording him all the information necessary for the proper development of the mines, and for the maintenance of the necessary devices and appliances to protect the miner from accident or harm while engaged in the perilous business of taking out the coal. It aids the miner by teaching him all that science knows for his own protection, while engaged at his vocation. It is deeply interested in the enforcement of all the laws of the State which regulates mines and mining, and which prescribe rules and regulations for the safety and welfare of the miners. The dean of this College, and his assistant, have been actively instrumental in organizing a Miners' Institute, the object of which is to bring about a better understanding and sympathy between the operator and the miner, and to further the interests of both by protecting the life of the miner and the property of the operator. The scope of this College is not limited to the development of coal mines, but extends to the discovery and development of all metals, stones, clays and other such minerals which may be found within the boundaries of the Commonwealth. It holds itself ready at all times to give information of the value of any discovery falling within its compass, and to furnish analyses and such other information as will enable the owner or discoverer to ascertain the commercial value of the mineral in question. This College has rendered the State invaluable service in the past, but it is believed that its usefulness is only beginning, and that in the next few years it will multiply many times over its usefulness to the Commonwealth.

College of Agriculture.

The College of Agriculture has been placed under the control of the Director of the Experiment Station, who is now Dean of the College of Agriculture. The Experiment Station is engaged in general research work in the realms of agricultural science and in solving all of the problems of the farmer and stock raiser; its value is incalculable. The departments of the College of Agriculture of which I shall speak more particularly are as follows:

Agronomy.

The Department of Agronomy of the College of Agriculture has two functions, viz.: The work of teaching, in the College proper, and research work, which is a function of the Experiment Station.

Students in the College of Agriculture are taught in this department the science of soil physics, soil fertility and crop production, which are the foundation of all agricultural industries. This being true, it follows that the work of the department bears a very intimate relation to all the activities of the business and professional life, for every business goes back to the soil in its ultimate analysis.

The agronomist has shown that by proper selection and breeding of good seed and by proper cultivation, the yield of most of our field crops may easily be doubled.

The Department is establishing soil experiment fields on various soil types of the State to determine the best methods of keeping up the fertility of productive soils, and of restoring worn soils to a state of profitable production. Half of the lands of the State are farmed at a loss because of their worn and unproductive condition. These experiment fields will be extended to all parts of the State as rapidly as funds will permit.

The same persons who have charge of this experimental work also do the teaching of soils and field crops, and bring to the class room the results of experience rather than the dry gleanings from text books.

Animal Husbandry.

The Department of Animal Husbandry is one peculiarly useful to the people of Kentucky. Its aim is to teach to the student every useful fact concerning the breeding, raising, feeding and curing of domestic animals of every kind. Kentucky is the natural home of fine stock and the business of breeding and selling such animals constitutes one of the great industries of its people. This Department not only teaches the students in attendance all that science knows concerning the successful raising of stock, but the professors hold themselves ready and willing to give to the farmers generally any and all information necessary

to solve the many problems which arise in connection with this department of agriculture in every day life. The many splendid stock farms in the vicinity of Lexington afford the students of Animal Husbandry exceptionally good opportunities to see and study the best specimens of fine stock, and this greatly facilitates the acquisition of the proper standard by which to correctly understand and judge stock.

Horticulture.

This department concerns itself with a discovery and with the more successful systems of the growing of orchard, vineyard, and small fruits adapted to the State of Kentucky, keeping in view its varied conditions of soil, elevation, market and domestic requirements, etc.

This concern extends to the market gardener, the greenhouse owner, and to every cultivator of a private garden (however small) in the selection of varieties; in methods of growing; in overcoming the vicissitudes of climate, and combating insect pests and fungus diseases of their plants.

It endeavors to promote the proper interest in and love for the development of the natural beauty of our State, through the adornment of our country sides, our towns and cities, with beautiful roads, streets, parks, and cemeteries, and especially in making the homes of Kentucky of both rich and poor alike, more beautiful, through a more generous planting of flowers, shrubbery, grass and trees.

It, in common with the departments of general agriculture and animal husbandry, aims to serve the people of Kentucky, (1) through its experiment work with vegetables, fruits and flowers; (2) through the practical instruction and training of students who come to the University; (3) through addresses and practical demonstrations through the State; (4) through its bulletins and through other publications issued or contributed to by its staff; (5) through a system of correspondence in which this department aims to answer as accurately and as fully as possible every inquiry sent to it concerning the many problems arising in this special phase of agriculture.

Kentucky Food and Drug Work.

The enforcement of the Pure Food and Drug laws of the State is lodged with the Experiment Station at the State University. This work is organized into a Division of the Station, consisting of 14 people, together with several post-graduate students engaged in the work of inspecting, analyzing and bacteriological examinations and in studying the technical, sanitary and other problems connected with the production and sale of meats, milk, bread and other foods and drugs.

The Kentucky pure food work was started by the Act of 1898 and established on a scientific basis at the University, it being the intention of the Legislature, by so doing, not only to inspect and prosecute, but, also to establish a means for investigating into problems and bringing aid to the manufacturers and dealers in their work for furnishing the people's food and drug supply. Kentucky is one of the three states where the work has been placed with the State University, the other states being North Dakota and Maine. Many universities, like Ann Arbor and the University of Pennsylvania, have established courses to equip in the new field brought about by the Pure Food and Drug work. By reason, however, of the enforcement of the law being lodged at the University, it is in a position to give a much broader course along these lines.

There are few statutes on the books so important to the people of Kentucky as the Pure Food Law. When this law was enacted, ninety per cent of the food products manufactured and sold was adulterated and much of it deleterious to human health. Nearly all the milk, catsup, sausage and such like articles of food were "preserved" by the use of artificial acids, poisonous to the human stomach. Seventeen years ago, the Director of the Experiment Station organized a very small health department and began the great fight for the preservation of the public health, which has grown to its present magnificent proportions. Beginning in a small way, there was built up a splendid organization of scientific young men, and as the Legislature increased the means, they increased the work of protecting the public

health. Inspectors were trained and started on their career of discovering fraud and deceit in the purveying of human food and bringing perpetrators of this nefarious business before the bar of public justice for punishment. In five years after this statute was enacted, the death of infants from diseases produced by impure milk was decreased by two-thirds. These inspectors visit every slaughter house, every bakery, every dairy, every pickle and catsup manufactory, in fact, every place in Kentucky where food is prepared and sold to the public, and see to it that the law is obeyed.

Not only do they enforce the law, but they make it popular. Men find that it pays to be honest, and they learn to appreciate the men and the statute which enables them to be honest and at the same time thrive financially. Men, as a rule, prefer to be honest, but if their competitors can adulterate their products and undersell the honest man, honesty soon SEEMS to cease to be the best policy, and everybody begins to adulterate and misbrand. Oleomargarine is labeled "June butter," which it no more resembles in fact than the manufactured sweets of a perfumer's shop resemble the flower-laden breath of a May morning. Sausage is given an attractive autumn leaf tinge by acids, and milk is preserved for the use of babes by chemicals. Now, by preventing these frauds, honesty is given a chance, and then it is found to pay. Every honest dealer is the statute's friend, and it is worth all its costs to enforce as a promoter of honesty, leaving out of view the great benefit it bestows on the public health.

I will now conclude what I have to say of the Agricultural College, as a whole, by pointing to the fact that the roster of the University shows that six years ago there were only twenty (20) students in the College of Agriculture pursuing a course leading to a degree; today, there are two hundred and fifty-three (253) such students, and there will probably be more before the end of the session. This is an increase of about twelve and one-half times the original number in six years, and it shows the wonderful hold that agricultural education has taken upon the public attention. Nothing that the University can do will make it so useful to or popular with the great body of Ken-

tucky people as to lead the way to better and more profitable agriculture. Kentucky being an agricultural state, farming, of course, is its leading and principal business. Unfortunately, a very large part of the farm lands of Kentucky has, by neglect and ignorant management, been allowed to be depleted in fertility until it is practically useless. This results in the poverty and discontent of the people. Anything which restores the fertility of the soil and makes farming profitable will build up great agricultural wealth in our Commonwealth and bring happiness and content to its people. The farmer by reason of his isolation and his long neglect has become suspicious, and it requires some tact to obtain his confidence or induce him to follow the advice of those whom he derisively styles "book farmers." One of the ways to reach his heart is to educate his boy and operate upon the father through the son. This is not only done by educating the boy in the Agricultural College but by establishing Corn Clubs and Pig Clubs in which the youth is used to demonstrate to the father the great value of scientific farming. The education of the boy is done, in part, by means of the teachers in the University; in other instances, it is done by the Extension workers on the farm and in the fields.

Extension Work.

Under the provisions of the Smith-Lever bill, with which you are perhaps familiar, the University, in connection with the government of the United States, is carrying on a very large and varied Extension Work throughout Kentucky. We are really conducting an out-of-doors University where the lecture halls and laboratories and class rooms are the farms, the corn fields and tobacco patches. Here the farming part of the community is given very valuable lessons in scientific agriculture. There are now in the field in Extension Work thirty-seven (37) men county agents and twenty-five (25) women county agents, making a total of sixty-two (62) extension workers, not including specialists of the college and demonstration specialists. The University is spending, this session, the sum of \$118,304.00 in Extension Work, of which the State Experiment Station con-

tributes \$12,000.00, the Smith-Lever Bill fund \$31,088.00, the Fiscal Court and other outside institutions \$30,216.00, United States demonstration work \$45,000.00, and next year this will be increased very considerably by the additions authorized by the Government under the Smith-Lever bill, which goes on increasing year by year, until 1923, when Kentucky's part will be \$142,300. All of this money is spent through the University but can only be used for actual demonstration work in the field. It is our intention and hope in a very few years to have a man county agent and a woman county agent in each county of the Commonwealth of Kentucky, and I see no reason to doubt that by pushing this great work, the Commonwealth of Kentucky will soon be agriculturally one of the greatest states in the Union.

In addition to the foregoing, I am pleased to report that the various racing organizations of the State have contributed five thousand dollars (\$5,000.00), for the purchase of fine thoroughbred sires which are to be stationed in various parts of the Commonwealth where there are no pedigreed horses, with a view of bringing up the standard of the equine stock of the State. These horses are kept at no expense to the University but are distributed throughout the State by the Agricultural College to points where they will do the most service. It gives me great pleasure to also report that Senator Johnson N. Camden has presented to the Agricultural College the use of his celebrated sire, "Luke." With the money above mentioned, there have been purchased nine stallions which, with Luke, given as before stated, furnishes ten (10) sires. Next year, there will be given an additional sum of five thousand dollars (\$5,000.00) with which to purchase ten (10) other sires, and all of these splendid horses will be used in the upbuilding of the quality of Kentucky's equine stock. I suppose I need not say that it is not the intention to raise thoroughbreds, but only to improve what we would ordinarily call the scrub stock of the country. Undoubtedly this is a most magnificent gift and the people should be very grateful to the progressive men who are behind it.

Before I close this part of my report, I desire to say that the

Agricultural Extension work of Kentucky stands in the very fore front of such work in the United States and is so held by the authorities at Washington who have the oversight of the whole work. I copy from a very recent letter to me from Dr. Bradford Knapp, who is at the head of the Farm Demonstration Work of the United States Bureau of Agriculture, the following expression of opinion as to the class of work that is being done through this University for the farmers in Kentucky. "Your institution has more credit today than it ever had before among the farmers of the State of Kentucky, and if you lose that, you lose one of your most valuable assets. * * * I know all the history, I think, of the extension work in the State for the last two or three years. At the conference of all the Extension workers in County Agent work in the United States at St. Louis, one week ago, I had the great pleasure of seeing Kentucky take a most conspicuous place. It was my pleasure there to see the work of the State of Kentucky not only take high rank but in my judgment, practically set the pace for all the other states. This reflects great credit upon your State and upon your institution."

During the past summer, there were held throughout the State by the Extension Department, a large number of farmers' chautauquas, farmers' institutes and educational institutes with an agricultural bearing. These were attended in large numbers by the farmers of the neighborhood. Learned lectures were delivered by specialists from the college and elsewhere on all the vital subjects in which farmers are interested. These included, of course, soil fertility; rotation of crops; animal husbandry; poultry raising; hog cholera, its prevention and cure; home economics; rural credits and co-operative marketing. I attended a large number of these in person and delivered such addresses as I thought appropriate to the occasion and best for arousing enthusiasm in everything which makes for the uplift of the rural community. Upon the whole, I think these meetings resulted in much good and will grow in popularity in the future.

During the first week of January, 1916, we held on the campus an agricultural meeting which we call Farmers' Week at the University. This meeting was very largely attended. We had

a corn show; horticulture show; poultry show and other exhibitions of those things most profitable to the farmers of Kentucky. There was also held a meeting of the Horse Breeders' Association, the sheep men, the Swine Breeders' Association, dairy men, bee men and other such like organizations in which our farmers are associated. This Farmers' Week I consider most helpful in arousing a general interest in all agricultural matters. We had, I hazard, one thousand farmers in attendance and many lectures were delivered by great specialists who were brought here from all over the country to give our farmers and agriculturists all that science has to say on the subjects of vital interest in agriculture and animal husbandry. It is my opinion that State University of Kentucky will fall very far short of its real mission if it fails to become the very heart of the development of Kentucky. It should point the way of improvement in all the great vital affairs of our Commonwealth, and it should be able to deliver the very last word of science on every subject of interest to the people.

The great mission then of the Agricultural College is to consider the condition of the farmer, to educate his children and to imbue them with a love for the farm and a just appreciation of the nobility of agriculture as a vocation; to solve all of his problems which need solution; to restore the fertility of the depleted soil; to find for him a market for his produce; to banish preventable disease from his family and his stock; to unloose from his throat the grasp of monopoly and unlawful combinations by whatever name called; to banish sloth and poverty and all unnecessary toil and to fix the bow of hope on the horizon of prosperity. This view in no wise loses sight of the value of cultural education or in any way minimizes it: it rather rounds out and illumines the rural life by clasping the hand of academic culture in that of agricultural success.

Home Economics.

The greatest asset of any commonwealth is not its industries, not its commerce, not its natural resources, not its agricultural products, but its homes, its children and its mothers. If the

thoughtful conclusion of authorities on human evolution is true, the beginning of all progress is in the home and it is impossible for any community to rise above its average home in intelligence, in health and in advancement of thought. The first requirement for the prosperity of any commonwealth is the health and efficiency of the working men and women who carry on its industries. Their efficiency and productive ability depends in large measure upon the houses they live in, the food they eat and the wholesomeness of their home surroundings.

The most significant evidence of the progress of the world is not that industry has national and state supervision, not that commerce has realized that certain ethical and moral standards are necessary, not that the franchise is in many countries being granted to womanhood but that homemaking is being professionalized and prepared for scientifically and practically.

Ten years ago the University introduced courses designed to prepare women for home-making, the number of matriculates has increased in this period most wonderfully; the scope of the work has been enlarged from single classes in cooking to departmental courses, granting a graduate degree in this special line of training. The influence of the Home Economics Department has not been confined within the University campus; realizing the need and desire of all the women of the State for better and more economical methods of cooking food, managing their households, feeding their families, the faculty of this department have lectured and demonstrated in various sections of the Commonwealth to thirty thousand men and women. Farm schools, Women's Clubs, High Schools, Community Clubs, Chautauquas have received their services, and influenced by the public education in this way given by the Home Economics Department the hot school lunch has been introduced into many rural schools, sewing and cooking courses have been made a part of school curriculum and mothers' clubs and parent teachers' associations have become an actively co-operating factor in the public education.

More vital than any result yet cited is the influence of the University course in Home Economics upon the woman student

who enters it. Facing rapidly changing economic and industrial conditions with new sociological and moral problems the woman in Home Economics studies the home as an institution and realizes with an awakened conscience its importance to the Commonwealth and to the race and her responsibility as a home maker. In the broadened horizon which such an attitude toward the home gives, new interests are developed. The woman cannot study cotton, linen and woollen fabrics used in clothing and household furnishing without becoming intimately acquainted with the fundamental facts of economic and industrial history, with the tragedy of life in the sweat shop, with labor problems, with laws of production and consumption and with the conditions of child labor. This means the education and development not only of her hand in the practical work but of her human interests and sympathy, and of her understanding of the great compelling problems of human society and the giving to her of the poise and power to think and judge logically and justly. It converts her from an undeveloped, static individual to a trained dynamic personality. It is illuminating to watch the work in the textile and food laboratories disclose the initiative, the creative ability, the skill, the judgment of the student; to see the manner in which she assumes her personal responsibility and counts the value of her influence, her time, her example and her life. Home Economics as a science has conferred a lasting benefit upon humanity in that it has taken the homely tasks of every day living and breathed into them compelling interest, making of the routine duties an art and giving back the raw material either a palatable food or simple, beautiful garment. The world generally has accepted the opinion of authorities in Economics that the problem of feeding and clothing the human race is not so much one of greatly increased production as of wiser, more efficient consumption. The great commodities of the commercial world are produced in order that they may be consumed and used by the home. In the home the mother and the wife is the purchaser. Upon her knowledge, her judgment, her training depends the proper feeding, the clothing and sanitary housing of the human race. Definite

positive training of these women students as wise, efficient consumers means more for the prosperity, morals, the efficiency of the men and women of this Commonwealth than any planned legislative, commercial or economic reforms. The Home Economics Department of the University is seeking to give back to the State of Kentucky broad-minded, great-hearted young women whose mission is to carry to every woman a vision of the added dignity and privilege of being the mothers of the men and women of tomorrow; a vision of her guardianship of the efficiency, the success, the happiness of her families; a vision of the civic, moral and social responsibility of each home to its community. To these young women has come the great responsibility of beautifying the concrete things of life and of taking the tasks and problems of the every day man and woman and energizing and vitalizing and spiritualizing them so that living becomes a fine art.

Law School.

Our Law School easily takes rank among the very first institutions of the country, and I confidently believe that it has no superior in the south or southwest and very few equals. It has been growing with rapid strides, and we are graduating each year a class of thoroughly educated and equipped lawyers. That you may have some idea of the estimation in which it is held by competent authorities outside of the State, I take the liberty of repeating a declaration of Professor Hinton, of Chicago University, during the annual meeting of the Association of American Law Schools, held in Chicago during Christmas week. After the subject of Practice Court had been thoroughly discussed, the Chairman, Professor Hinton, declared that our school had made more advancement in this class of work than any other school in the country. A distinguished member of the Circuit bench said to me, personally, that the students of State University stood the best examinations of any young men who applied to him for license to practice law.

College of Arts and Science.

The College of Arts and Science undertakes to give to the students a full, well rounded out, cultural education. In addition it teaches those sciences which lie at the base of most vocational education; it teaches mathematics for the engineers, chemistry for the agriculturist and the engineer and also logic for the lawyer. I believe our academic department is equal to that of any similar institution in the south or southwest, and no student need leave the State of Kentucky to get all the classical education that is either useful or necessary to him. This is the largest college in the University, and its growth has been solid and permanent.

School of Journalism.

While all the departments of the College of Arts and Science are most admirably conducted and accomplishing great results, I feel that it will only be fair to mention the last department instituted in this college. The School of Journalism was instituted in the College of Arts and Science two years ago. It has grown with great rapidity and now has seventy students, five of whom are regularly employed on a salary by the newspapers. I believe we can confidently rely on great good coming from this department. We will be sending back to the body of the people of Kentucky each year accomplished young journalists full of enthusiasm for their great calling and aspiring to its highest ideals.

School of Education.

This department of the College of Arts and Science is concerned in training teachers how to teach. I need not say that it is one of the most important departments of the University. Kentucky will never be redeemed from ignorance without having an efficient common school system, and she cannot have this without competent teachers. The School of Education is sending out each year a splendid class of young men and young women devoted to the vocation of teaching. Their services are

much sought for wherever competent teachers are desired, and they soon take rank among the very best and most accomplished teachers of the State.

Military.

This University is paying great attention to Military Science and the battalion now consists of about four hundred cadets with a military band of thirty-five pieces. I think it ranks with the very best cadet battalions in the country. They were on parade in the Governor's inaugural ceremonies in December last. Many of those who saw them in the parade declared that they did not know any organization superior to them.

Athletics.

The University has a splendid department of athletics, both for young men and young women, and those who have it in charge are doing everything that is possible to develop the bodies of the students to the highest state of efficiency, not to make athletes, but to build up a sound, healthful, wholesome body, developed not in one particular line but in every way, our aim being to graduate students of sound mind, sound body and good character.

Growth of the University.

That you may have before you the annual growth of the University for the past six or seven years, I append herewith an official statement from the roster of the University, showing the actual matriculation each year up to 1916.

1910	1911	1912	1913	1914	1915	1916
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
721	803	1262	1229	1244	1418	1439 (Estimated)

As we are just in the midst of this last year, I am forced to give an estimate of its students, but using the same increase that took place last year and the year before, the number will reach

the figure I have estimated, 1,439 students. I believe this growth is not exceeded by any similar institution in the country.

In order that you may also have before you the relative endowment and cost of education between our University and that of others, I herewith submit to you a list of various colleges with their endowment and the aggregate endowment of them all and a statement of the cost of educating each student. These figures were compiled two years ago by our business agent, Mr. Hywel Davies, and I give them to you as compiled by him, believing them in every way reliable.

The statement is as follows:

University	Annual Income.	No. of Students.
Wisconsin	\$2,000,000.00	4,500
Nebraska	850,000.00	3,500
South Carolina	115,000.00	426
Illinois	2,225,000.00	4,850
Texas	540,000.00	2,100
West Virginia	210,000.00	715
Missouri	1,000,000.00	2,700
Indiana	336,500.00	2,000
Iowa	830,000.00	2,100
Alabama	135,000.00	750
Arkansas	275,000.00	1,200
North Carolina	263,500.00	900
Mississippi	104,000.00	450
Ohio	1,100,000.00	3,750
Michigan	1,750,000.00	5,800
California	1,675,000.00	4,750
Virginia	295,000.00	800
Minnesota	2,150,000.00	7,000
Purdue	375,000.00	2,000
Oklahoma	175,000.00	800
Kansas	610,000.00	2,500
Miami	175,000.00	850
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	\$17,188,000.00	54,441 av. \$310
Kentucky	210,000.00	1,439 av. 145

Taking the whole number of students at these foreign schools, we find them aggregating approximately 55,000, with a total income of over seventeen million dollars per annum. This

makes an average per student of three hundred and ten dollars per year, while at our school it costs \$145 per student per annum. The poverty of the Kentucky State University as compared with the average of these twenty-two Southern, Western and Central State Universities is still further emphasized when the income of this University is only \$210,000, while the average income of the other universities is about \$800,000 per annum.

I also submit another statement compiled by Mr. Davies two years ago, which was taken by him from information acquired from the Carnegie Foundation:

Ratio of Teachers to Students.

(Given by the Carnegie Foundation.)

California	I	Teacher to	8.5	Students
Wisconsin	I	" "	12.0	"
Columbia	I	" "	7.3	"
Harvard	I	" "	7.0	"
Yale	I	" "	9.0	"
Pennsylvania	I	" "	9.8	"
Leland Stanford	I	" "	8.5	"
Michigan	I	" "	15.0	"
Illinois	I	" "	8.7	"

Now, in Kentucky State University we have approximately 1,450 students and only 89 professors, instructors, etc., or an average of one teacher to 16.3 students, showing that each teacher in State University does nearly double the work of the average shown in the above list of other similar institutions.

I incorporate herein a complete financial statement covering the two school years, 1913-14 and 1914-15.

STATE UNIVERSITY OF KENTUCKY. STATEMENT OF ASSETS AND LIABILITIES

June 30, 1915.

REAL ESTATE.

University Real Estate	\$	127,000.00
University Buildings		476,000.00
University Equipment, etc		154,653.96

Experiment Station Real Estate	122,850.00
Experiment Station Buildings	127,500.00
Experiment Station Equipment,	65,000.00
Experimental Farm	8,500.00
Total	<u>\$1,081,503.96</u>
State Bonds—proportionate interest under Land Grant Act	\$ 144,075.00
Grand Total	<u>\$1,225,578.96</u>

July 1, 1913, to June 30, 1915.

INCOME.

Federal Appropriations	\$ 85,500.00
Interest on Land Grant Bonds	17,289.00
General Educaitional Board	6,000.00
State Appropriations	174,000.00
State One-Half Cent Tax	110,627.39
Student Fees and Damages	15,755.75
University Press	26,446.30
Rents, supplies and sundries	1,463.49
Total	<u>\$ 437,081.93</u>
Expenditures	<u>445,605.61</u>
Excess of Expenditures over Receipts	\$ 8,523.68

The excess of expenses over receipts, as shown in the above statement, was caused by the payment of insurance and interest and the purchase of supplies in advance, and is more than absorbed by the list of assets as shown below.

LIABILITIES.

Bank Overdraft	\$21,149.29
Bills Payable—	
Phoenix-Third Nat. Bank	30,000.00
Insurance Notes	3,465.10
Margaret McLaughlin	4,500.00
Peabody Fund Trustees	40,000.00
Sundry Accounts Payable	9,669.87
Accrued Interest	223.00—\$109,007.26

CURRENT ASSETS

Accounts Receivable—

Petty Cash\$ 785.97

Printing House\$2,434.65

Athletic Association ... 594.50

Patterson Hall 1,157.84

State Hall 922.72

Rent of House 120.00

Sundry Personal Acc'ts. 525.39

Students' Returned Ch'ks 283.57

Students' Fees 1,745.40

One-half Cent Tax 235.23

Bond Interest 4,322.25—\$12,341.55

Unexpired Insurance Premiums 4,768.15

Interest Paid in Advance 100.00

Inventory of Supplies 5,513.32

Total\$23,508.99

Net Indebtedness 85,498.27

Legal Amount 87,350.99

Under Legal Amount\$ 1,852.79

EXPENDITURES.

July 1, 1913, to June 30, 1915.

Executive\$ 13,604.26

Business Agent 11,704.13

Registrar 9,084.96

Dean of Women 1,276.97

Dean of Men 90.55

Y. M. C. A. 3,083.90

Chemistry 23,720.01

Physics 17,037.21

Geology 5,899.27

Physiology 4,823.78

Mathematics 16,070.22

Education and Philosophy 20,852.71

History and Political Economy 7,051.14

Ancient Language s..... 9,317.47

Modern Languages 11,045.25

English	16,299.05
Agriculture and Botany	34,104.16
Zoology and Entomology	6,707.80
Home Economics	11,163.30
Mechanical and Electrical Engineering	54,155.73
Mines and Metallurgy	11,190.48
Civil and Rural Engineering	16,062.33
Law	14,180.09
Physical Education	9,878.75
Military	2,126.85
Summer School	5,816.21
Library	6,644.76
Grounds	4,318.50
Patterson Hall	5,626.10
Boys' Dormitory	4,558.49
Graduate School	2,286.25
Journalism	2,652.84
Supplies	1,064.93
University General	46,855.01
University Press	30,083.53
State Hall Building and Equipment	5,168.62
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Total	\$445,605.61

It will be seen from the foregoing that the institution has lived within its appropriation as by law required, during the two years covered by this report.

For every dollar expended by the institution during the time covered by this financial statement, there is a receipt-voucher on file in our business office and a duplicate of it on file in the Auditor's office at Frankfort, so that any one interested can see where every dollar went, who got it and for what.

As a resume of all that has gone before, I call your attention to the fact that the State University has doubled its student roster in the last six years, that its teachers are doing more work than teachers in other similar institutions in the country, and that the cost of educating a student at State University is less than half of the cost in the average university of the country. I wish to emphasize the fact that money invested in the education of the youth of the State and the application of science to the principles of agriculture is an investment and not an expense; an

investment which will more surely pay dividends than any investment the State can make. It is the duty of the State to swing wide open the door of opportunity for all the children of all the people of the Commonwealth, especially for those in whose faces poverty has closed this door and who, without this action on the part of the State, will be left in ignorance and want. In this good policy? Is it a good business principle? What is the most valuable possession of the State? Is it houses and lands or jewels or gold? No; the real wealth of the State is its youth—the bright-eyed, strong-limbed, sound-minded Anglo-Saxon sons and daughters of Kentucky. These are the brightest jewels in the casket of the Commonwealth's glory. If they are neglected, the loss is past computation. If they are educated and trained for the battle of life, you have started into action a force for good that will never die—a force for good that will only have begun when the stars have withered in the firmament and time has faded into eternity.

I have spoken more in favor of the farmer's boy and the farmers's girl in this report because agriculture has been more neglected than the other sciences, and I am firmly convinced that it is only by putting agriculture on a sound financial basis that this State can ever be redeemed from ignorance and poverty. What scientific agriculture can do for a state is aptly illustrated in the case of Denmark. In 1864, Denmark was conquered by Germany and deprived of her fairest province. What was left was a poor country about the size of Kentucky. The nation was, apparently, hopelessly in debt, with no resources to meet its obligations. Its forests were gone, and it had neither mines nor fisheries, manufactories nor commerce. The Danes, at that time, were among the poorest people per capita in the world. It is said they seriously contemplated taking to their ships and seeking a better Denmark over sea. But wiser counsels prevailed, and scientific agriculture was introduced into the schools; practically the whole nation went to school. Co-operation and science were the watchwords of the hour, with the result that Denmark is today one of the richest—if not the richest nation per capita in the world. What Denmark was in

1864, Kentucky in a measure is today. Her position is far down in the scale of wealth and of educational efficiency. By pursuing the same methods as Denmark, she should soon be one of the best educated and, relatively, the richest State in the Union. Her natural resources are second to none; it only needs the magic touch of science to transmute these resources into "wealth beyond the dreams of avarice."

In conclusion I wish to reiterate that every interest in the Commonwealth is involved in the fate of agriculture; it is the basis of the largest part of our real wealth. Unless the farmer prospers, every other business must correspondingly suffer; if he is prosperous, every other interest is prosperous. It matters little how much money you spend on pensions or criminals or idiots, on the insane, the deaf and dumb, the halt and the lame, if you do not dry up the fountains of the farmer's wealth; if you make his farm fertile, his crops smile in the waving fields and his bins and granaries burst in the exuberance of their overflow, he cares not what taxes you take or spend. But when you take from him the money which constitutes his daily living and the one chance for educating his children, then you touch his hope for the future and turn it into despair.

But I must close this report already too long. It has been well said that facts are like loose grains of sand; but principles are those grains fused into the rocks upon which rest the eternal hills. I have brought you the loose facts and it is for you, in the crucible of your wisdom, to fuse them into the eternal principles of scientific education for all the children of all the people. On this rock at last must rest the permanent prosperity and greatness of the Commonwealth of Kentucky.

Very respectfully submitted,

HENRY S. BARKER.

President.

I file herewith the report of the Director of the Experiment Station made to me as President of the Universtiy, for the same period covered by this report to you. I felt I could not do jus-

tice to the work of the Experiment Station in my report and I therefore, file with it a copy of the report of the Director, and make it a part of my report to you.

The report of the Director and my own are printed by our own printing department, and I mention this fact to call your attention to the class of work we are doing in that department.



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